

Algebraic Concepts
Lesson 22: Linear Inequalities and Their Graphs
Math for Standards

Name _____

Date _____

EQ: How do you graph and find solutions to linear inequalities?

Start off by graphing the _____ by making the inequality look like slope-intercept form.

The line will be _____ for \geq and \leq , and _____ for $<$ and $>$.

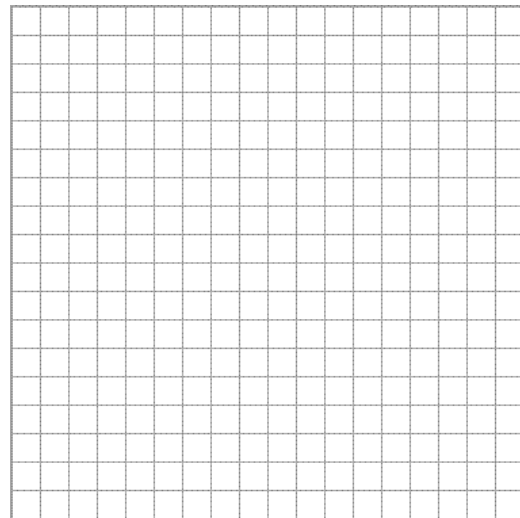
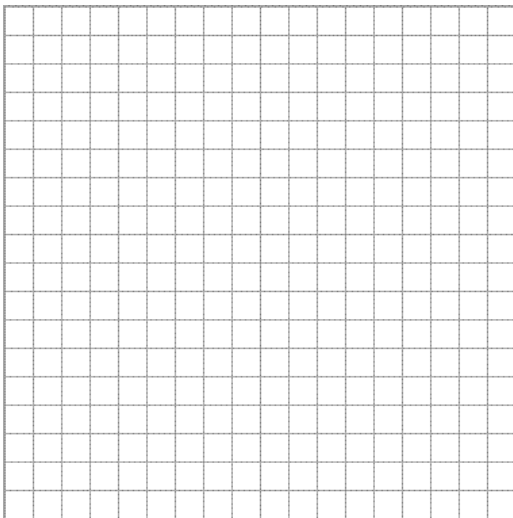
Determine where to _____ by checking the signs if the inequality is written in slope-intercept form: shade _____ for \geq and $>$, and shade _____ for $<$ and \leq . Similarly, if x is by itself, shade _____ for \geq and $>$, and shade _____ for $<$ and \leq .

Check your answer by choosing a _____ in the shaded region (NOT ON THE LINE) and plugging it into the original inequality.

Example 1: Graph the following inequalities. State three possible solutions.

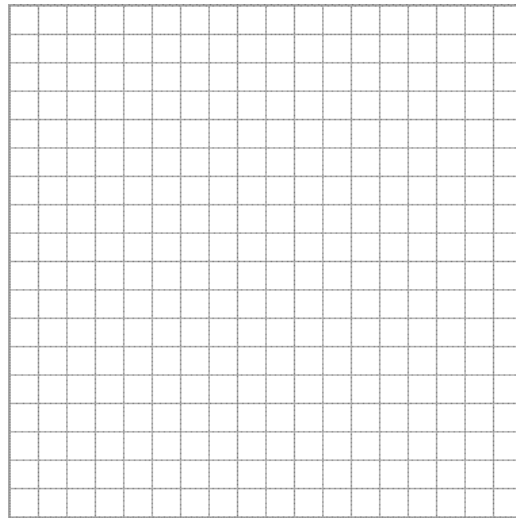
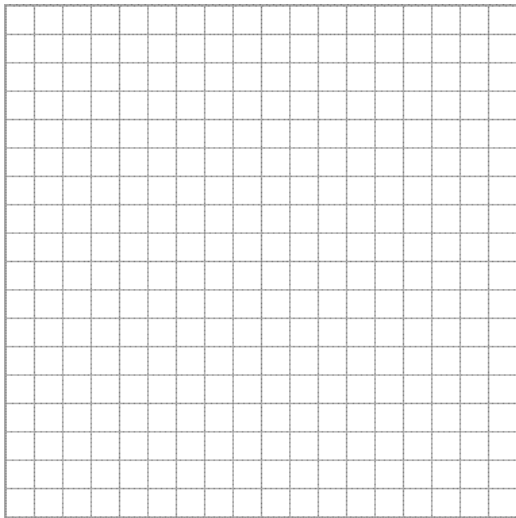
a. $y > 2$

b. $x + y > 3$



c. $x - y \geq 5$

d. $y - x \leq 2$



Example 2: Is $(3, 2)$ a solution to $y < 2x - 4$? How do you know?

Example 3: Matt Mitarnowski doesn't like to cook from recipes. When he makes a stew, he uses a combination of onions and potatoes, but does not measure the weight of either. However, he does not use more than a total of 500 grams of the two vegetables.

a. Write an inequality to represent the situation.

Let n = the weight of the onions and p = the weight of the potatoes

b. Is the point $(n, p) = (275, 225)$ a solution to the inequality? How do you know?